

Electrochemical Behavior of Titanium Carbide  
in Chloride Melt

S/078/60/005/06/08/030  
B004/2016

dependence between the current yield for titanium on the current density  $D_a$  at  $500^\circ\text{C}$ . With  $D_a > 0.1 \text{ a/cm}^2$  mainly  $\text{TiCl}_4$  is formed, which is sublimated from the melt. Fig. 2 represents the polarization of the titanium carbide anode at  $530^\circ$ ,  $650^\circ$ , and  $800^\circ$  ( $D_a = 5 \cdot 10^{-4}$  to  $1 \text{ a/cm}^2$ ) in the coordinates  $\log i$ ,  $\varphi$  ( $\varphi$  = potential referred to a chlorine electrode). The authors discuss the low polarization at small  $D_a$ , which they ascribe to diffusion of titanium from the interior of the electrode toward the surface. The respective equations are written down. The decomposition of the carbide anode starts at potentials which, depending on  $D_a$  and temperature, are  $0.6 - 1.4 \text{ v}$  more negative than the potentials of chlorine separation, and are accompanied by a polarization of  $0.5 - 0.65 \text{ v}$ . Fig. 3 shows the temperature dependence of the potential of the  $\text{TiC-C}$  electrode with respect to a  $\text{Cl}$  electrode. Moreover, the authors discuss the system  $\text{Ti-C}$ , which below  $900^\circ\text{C}$  consists of the metallic  $\alpha$ -phase with less than 1 per cent of  $\text{C}$  and the  $\delta$ -carbide phase with 13 - 20 per cent of  $\text{C}$ . The emf of the cell  $\text{Ti/TiCl}_2, \text{TiCl}_3, \text{LiCl, KCl}_{\text{melt}}/\text{Ti}_x\text{C}$  between  $425$  and  $725^\circ\text{C}$  and its

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temperature dependence (Fig. 5) are examined for the compositions of the  $\delta$ -phase between  $TiC$  and  $Ti_{1.6}C$ . The cell used for this purpose is schematically represented in Fig. 4. The changes in enthalpy, entropy, and the isobaric potential with changing composition within the range of the  $\delta$ -phase of the system  $Ti - C$  were calculated from experimental results and data available in publications. There are 5 figures, 2 tables, and 11 references: 6 Soviet and 5 English. ✓C

SUBMITTED: December 27, 1958

Card 3/3

SMIRNOV, M.V.; SOKOLOVSKIY, Yu.S.; KRASNOV, Yu.N.

Equilibrium between cerium and its bi- and trivalent ions in a  
fused eutectic mixture of lithium and potassium chlorides. Trudy  
Inst. elektrokhim. UFAN SSSR no.5:7-16 '64.

(MIRA 18:2)

SMIRNOV, M.V.; KRASNOV, Yu.N.; KHAFEMOV, F.P.

Reaction of lanthanum trichloride with a molten eutectic mixture  
of lithium and potassium chlorides. Trudy Inst. elektrokhim.  
RFAN SSSR no.5:53-60 '64.

(MIRA 18:2)

L 10881-66 EWT(a)/ETC/EWG(a)/EWP(j)/T/EWP(t)/EWP(b) IJP(c) DS/JD/JW/JG/RM  
 ACC NR: AT5028238 SOURCE CODE: UR/2631/65/000/006/0029/0037

AUTHOR: Smirnov, M. V.; Krasnov, Yu. N.; Khazemov, F. F.; Komarov, V. Ye.  
 44.55 44.55 44.55 44.55 48 B+1

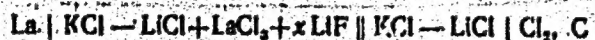
ORG: Institute of Electrochemistry, Ural Branch, Academy of Sciences SSSR (Akademiya nauk SSSR, Ural'skiy filial, Institut elektrokhimii)  
 44.55

TITLE: Instability constants of fluoride complexes of lanthanum in the molten eutectic mixture LiCl-KCl  
 27 7

SOURCE: An SSSR, Ural'skiy filial. Institut elektrokhimii. Trudy, no. 6, 1965. Elektrokhiymiya rasplavlennykh solevykh i tverdykh elektrolitov (Electrochemistry of fused salts and solid electrolytes), 29-37

TOPIC TAGS: lanthanum compound, complex molecule, lithium fluoride, emf  
 27 27

ABSTRACT: The emf's of the galvanic cells



were measured at 600-800C, LiF being present in the electrolyte in amounts of 2.5, 5.0, 10, and 20 wt. %. The experimental data showed the existence of the following lanthanum complexes in the melt:  $\text{LaF}^{2+}$ ,  $\text{LaF}_2^+$ , and  $\text{LaF}_3$ . Expression for the temperature dependence of the instability constants of these complexes were obtained:

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$$\begin{aligned} \lg K_1 &= \lg \frac{[La^{3+}][F^-]}{[LaF^{2+}]} = -1.575 - \frac{900}{T}; \\ \lg K_2 &= \lg \frac{[La^{3+}][F^-]^2}{[LaF_2^+]} = -2.305 - \frac{1300}{T}; \\ \lg K_3 &= \lg \frac{[La^{3+}][F^-]^3}{[LaF_3]} = -2.535 - \frac{1800}{T}; \end{aligned}$$

Expressions derived for their successive dissociation were:

$$\begin{aligned} \lg K' &= \lg \frac{[LaF_2^+][F^-]}{[LaF_3]} = -0.230 - \frac{500}{T}; \\ \lg K'' &= \lg \frac{[LaF_2^+][F^-]}{[LaF_2^+]} = -0.732 - \frac{400}{T}. \end{aligned}$$

An equation was obtained for the equilibrium potentials of lanthanum in mixed fluoride-chloride melts at  $\frac{[F]}{[La]} > 10$ :

$$E_{La} = -3.721 + 5.19 \times 10^{-4} T + 0.661 \times 10^{-4} T \lg \frac{[LaF_3]}{[F]^3} + V$$

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L 10881-66

ACC NR: AT5028238

relative to a chlorine reference electrode.

Fused salts

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 005

18

jw

3/3

Card

SMIRNOV, M.V.; KRASNOV, Yu.N.; KHAZEMOV, F.F.; KOMAROV, V.Ye.

Instability constants of lanthanum fluoride complexes in a  
molten eutectic mixture LiCl - KCl. Trudy Inst. elektrokhim.  
UFAN SSSR no.6:29-37 '65. (MIRA 18:11)



L 42157-66 EWT(m)/T/EWP(t)/ETI IJP(c) DS/WW/JD/JG/GD

ACC NR: AT6022482

(A)

SOURCE CODE: UR/0000/65/000/000/0254/0257

AUTHOR: Smirnov, M. V.; Usov, P. M.; Krasnov, Yu. N.; Khazemova, T. F.

ORG: Institute of Electrochemistry, UFAN SSSR (Institut elektrokhimii UFAN SSSR)

TITLE: Reaction of metallic lanthanum<sup>27</sup> with its trichloride<sup>27</sup>

SOURCE: Vsesoyuznoye soveshchaniye po fizicheskoy khimii rasplavlennyykh soley. 2d, Kiev, 1963. Fizicheskaya khimiya rasplavlennyykh soley (Physical chemistry of fused salts); trudy soveshchaniya. Moscow, Izd-vo Metallurgiya, 1965, 254-257.

TOPIC TAGS: lanthanum, ~~chloride~~, electrolysis, TRICHLORIDE, CHEMICAL REACTION, EMF

ABSTRACT: The emf method was used to study the reaction of La with  $\text{LaCl}_3$  and solutions of  $\text{LaCl}_3$  in the fused eutectic mixture  $\text{LiCl-KCl}$  in order to determine whether compounds of lanthanum of lower oxidation states exist, and if so, what part they play in the electrolysis of La in fused salt media. The phase diagram of the  $\text{LaCl}_3$ -La system was determined experimentally in the range from the pure trichloride to the product of its saturation with metallic La. The emf of galvanic concentration cells composed of two cells (liquid La in molten  $\text{LaCl}_3$  saturated with La, and  $\text{Mo}$  immersed in molten  $\text{LaCl}_3$  containing 0.35-23/4 mole % dissolved La) at 850-1000°C showed that the dissolution of La in the trichloride involves its reduction to the di- or monochloride. Emf isotherms plotted from experimental points were similar to those which should be expected for electrolytes made up of a mixture of  $\text{LaCl}_3$  and  $\text{LaCl}_2$ . It is concluded that metallic La

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ACC NR: AT6022482

partially reduces  $\text{LaCl}_3$  to the dichloride; the latter is unstable, and can exist only in fused mixtures with the trichloride in contact with the metal in amounts of no more than 86 mole %. Upon solidification of the fused salt mixtures, the dichloride decomposes into the metal and the trichloride. By strengthening the  $\text{La}^{3+}\text{-Cl}^-$  bonds, the introduction of alkali metal chlorides into the melt stabilizes the trichloride to such a degree that it can no longer be reduced to the dichloride by the metal. For this reason, the electrolysis of La in fused alkali metal chlorides is not associated with the formation of La ions of a lower oxidation state in the electrolyte. Orig. art. has 3 figures.

SUB CODE: 07/ SUBM DATE: 23Aug65

Card 2/2

ГНЕВУШЕВ, В.В., dotsent; КАРАШУРОВ, Ye.S., kand. med. nauk; КРАСНОВ, Yu.P.,  
assistant

Deep, spaced respiration as a factor in restoring the  
functional possibilities of external respiration following  
surgery for bronchial asthma. Uch. zap. Stav. gos. med.  
inst. 12:258-259 '63. (MIRA 17:9)

1. Kafedra obshchey khirurgii (zav. prof. Yu.S. Gilevich)  
kafedra lechebnoy fizkul'tury i VK (zav. dotsent V.V.  
Gnevushev) Stavropol'skogo gosudarstvennogo meditsinskogo  
instituta.

KRASNOV, Yu.P., inzh.

Nomogram for the conversion of acceleration vibration levels  
at amplitudes of displacement. Sudostroenie 25 no.9:57-58  
S '59. (MIRA 12:12)  
(Vibration (Marine engineering))

KRASNOVA, A. F., Cand Biol Sci -- (diss) "Biochemical changes in muscle and in blood during muscular activity of forceful character." Leningrad, 1960. 19 pp; (State Order of Lenin and Order of Red Banner Inst of Physical Culture im P. F. Lesgaft); 350 copies; price not given; (KL, 17-60, 147)

KRASNOVA, A. F., LESHIKEVICH, L. G., ROGOZKIN, V. A., CHAGOVETS, N. R., YAKOVLEV, N. N.,  
(USSR).

The Significance of ATP content for Biochemical Processes after Exercises of Various  
Duration.

report presented at the 5th Int'l.  
Biochemistry Congress, Moscow, 10-16 Aug. 1961.

KRASNOVA, A.F.; CHAGOVETS, N.R.

Biochemical changes in rat muscles during exercise of various duration and under conditions of supplementary inclusion of malt extract, maltose, and glucose into their food ration. Ukr. biokhim. zhur. 33 no.3:402-406 '611 (MIRA 14:6)

1. Sektor biokhimii Leningradskogo nauchno-issledovatel'skogo instituta fizicheskoy ku'tury.  
(MALT EXTRACTS) (EXERCISE) (MUSCLE)

YAKOVLEV, N.N.; KALEDIN, S.V.; KRASNOVA, A.E.; LESHKEVICH, L.G.;  
POPOVA, N.K.; MOGOZKIN, V.A.; CHAGOVETS, N.R.; KOSTYGOVA, L.A.

Characteristics of physiological and chemical adaptation of the body  
to muscular activity in relation to the length of rest intervals  
between tasks during training. Fiziol. zhur. 47 no.6:752-757 Je '61.  
(MIRA 15:1)

1. From the Research Institute of Physical Culture, Leningrad.  
(EXERCISE) (REST) (METABOLISM)



KRASNOVA, A.F.

SEVERIN, Sergey Yevgen'yevich, Institute of Pharmacology and Chemotherapy, Academy of Medical Sciences, Moscow; VUL'FSON, R. S. [possibly P.L. VUL'FSON, Chair, Animal Biochemistry, Moscow State University (1959 position)] - "The importance of karnosis in neurotrophic relations" Session I

SHAMARINA, N. N., Physiological Laboratory, Academy of Sciences USSR, Moscow - "Effect of tetanic stimulation on different muscle fibers" II-2-b

STUDITSKIY, Aleksandr Nikolayevich, ZHENEVSKAYA, R. P., and RUMYANTSEVA, O.N., all of the Institute of Animal Morphology imeni A. N. Severtsov, Academy of Sciences USSR, Moscow - "Neurotrophic influence in recovery of structure and function of regenerating muscle" I

TELEPNEVA, V. I., Chair, Animal Biochemistry, Moscow State University, Moscow - "Changes in muscle following denervation" Session II-2-a

YAKOVLEV, N. N., KRASNOVA, A. F., and CHAGOVETS, N.R., all of the Leningrad Scientific Research Institute, Institute of Physical Culture, Leningrad - "Adaptation of energy metabolism in muscle" Session II-2-b

Report to be submitted for the Symposium on the Effects of Use and Disuse on Neuromuscular Functions (IUPS), Prague-Liblice, Czech, 18-24 Sep 1962.

KRASNOVA, A.F.; CHAGOVETS, N.R.

Effect of the use of malt extract on biochemical changes  
in the blood of athletes during work of different types.  
Vop. pit. 21 no.2:37-39 Mr-Apr '62. (MIRA 15:3)

1. Iz sektora biokhimii (zav. - prof. N.N. Yakovlev)  
Leningradskogo nauchno-issledovatel'skogo instituta fizicheskoy  
kul'tury.

(MALT-EXTRACTS)

(EXERCISE)

(BLOOD)

YAKOVLEV, N.N.; ERASNOVA, A.F.

Effect of muscular activity on the interaction of thiol groups  
of myosin with adenosine-triphosphoric acid. Ukr.biokhim.zhur.  
34 no.1:95-103 '62. (MIRA 17:4)

1. Research Institute of Physical Culture, Leningrad.

KRASNOVA, A.F.

Sarcoplasmic muscle proteins and serum proteins following a prolonged muscular activity and rest. Ukr. biokhim. zhur. 36 no.2:209-214, '64.

(MIRA 17:11)

1. Section of Biochemistry of the Research Institute for Physical Culture, Leningrad.

KRASNOVA, A.F.

Influence of physical exercise on the blood serum protein fractions  
in elderly persons. Fiziol.zhur. 50 no.6:756-761 Je '64.

(MIRA 18:2)

1. Sektor biokhimii Nauchno-issledovatel'skogo instituta fizicheskoy  
kul'tury, Leningrad.

KRASNOVA, A.F.; YAKOVLEV, N.N.

Connection between the adenosinetriphosphatase activity of myosin and the content of free thiol groups in it. Ukr. biokhim. zhur. 34 no.3:428-434 '62. (MIRA 18:5)

1. Nauchno-issledovatel'skiy institut fizicheskoy kul'tury, Leningrad.

KRASNOVA, A. G.

"The Effectiveness of Feeding Pure Fodder Protein to Growing Pigs."  
Cand Agr Sci, Moscow Veterinary Acad, Min Higher Education USSR, Moscow,  
1955. (ZL, No 9, Feb 55)

SO: Sum. No. 631, 26 Aug 55-Survey of Scientific and Technical  
Dissertations Defended at USSR Higher Educational Institutions.  
(14)

POGODAYEV, K.I.; KRASNOVA, A.I.

Oxidation-reduction processes of metabolism in patients with  
schizophrenia during relieving diet therapy. Trudy 1-go MMI  
26:315-323 '63. (MIRA 17:2)



ZYUZIN, I.K., prof., KRASHOVA, A.I., mladshiy nauchnyy sotrudnik

Effect of small doses of radioactive phosphorus on nitrogen metabolism,  
hemopoiesis, and the function of the cardiovascular system. Vest.rent.  
1 rad. 33 no.3:75-76 My-Je '58 (MIRA 11:8)

(PHOSPHORUS, radioactive

eff. on nitrogen metab., hemopoietic system., & cardiovasc.  
funct. (Rus))

(NITROGEN, metab.

eff. of radiophosphorus (Rus))

(HEMOPOIETIC SYSTEM, eff. of radiations on  
radiophosphorus (Rus))

(CARDIOVASCULAR SYSTEM., eff. of radiations on  
radiophosphorus, on funct. (Rus))

IVANOVA, N.S.; KRASNOVA, A.I.

Effect of some medicinal substances on the indices of nitrogen  
metabolism in epilepsy. Vop. psikh. no.4:117-123 '60.

(MIRA 15:2)

(EPILEPSY) (NITROGEN METABOLISM)  
(DRUGS--PHYSIOLOGICAL EFFECT)

LOKTIONOVA, N.A.; Prinimali uchastiye: PANTYUSHKOVA, N.S.; POBOCHINA, T.V.;  
KRASNOVA, A.I.; FEL'DMAN, F.Z.; INOZHARSKAYA, L.A.; BOGUKHVALOVA,  
Z.V.; PRYTKOV, I.I.

Increasing the dimensional stability of Al9 alloy castings  
by heat treatment. Alium. splavy no.1:80-91 '63.

(MIRA 16:11)

KRASNOVA, A.I.

Effect of the blood serum from schizophrenia patients on the carbohydrate metabolism in chick erythrocytes. Zhur. nevr. i psikh. 65 no.8:1206-1211 '65. (MIRA 18:8)

1. laboratoriya obshchey patofiziologii (zavednyushchiy M.Ye. Vartanyan) Instituta psikiatrii AMN SSSR, Moskva.

VISHNYAK Yu.I.; KRASNOVA, A.I.

Polarographic study of the blood serum of schizophrenia patients.  
Zhur. nevr. i psikh. 65 no.2:251-255 '65.

1. Institut psikhiiatrii AMN SSSR, Moskva.

(MIRA 18:9)

VINOGRAD, M.I.; KISELEVA, S.A.; SMIRNOVA, A.V.; KRASNOVA, A.K.;  
PAYVILEVICH, G.A.; PAYPEROVA, I.A.; SMIRNOV, Yu.I.

"Metallography laboratory" by E.V.Panchenko and others. Reviewed  
by M.I.Vinograd and others. Zav.lab. 26 no.1:127-128 '60.

(MIRA 13:5)

(Metallography)

VINOGRAD, M.I.; KISELEVA, S.A.; KRASNOVA, A.K.

Accuracy of a quantitative evaluation of the contamination of  
steel by inclusions. Zav.lab. 26 no.9:1086-1088 '60.

(MIRA 13:9)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy  
metallurgii im. I.P.Bardina.

(Steel--Testing)

KRASNOVA, A.K.

3

S/028/61/000/011/003/004  
D221/D301

AUTHORS: Vinograd, M.I., Kiseleva, S.A., Akinova, Ye. P.,  
Apolovnikova, L.G., Shevchenko, L.N., Kedrina, A.M.,  
and Krasnova, A.K.

TITLE: The metallographic method of determining non-metallic  
inclusions

PERIODICAL: Standartizatsiya, no. 11, 1961, 27-33

TEXT: The draft standard: "Steel - The metallographic method of deter-  
mining inclusions" was prepared by the Tsentral'nyy nauchno-issledovatel'-  
skiy institut chernoy metallurgii (Central Scientific Research Institute  
of Ferrous Metallurgy) and the Ukrainskiy nauchno-issledovatel'skiy trub-  
nyy institut (Ukrainian Scientific Research Institute of Pipes). It in-  
cludes a scale, covers non-metallic inclusions, and envisages random  
sampling when the disposition of material is unknown, or from three  
points along the height of ingots. The project recommends discussion  
on the quantity of specimens which would ensure the required accuracy.

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3

S/029/61/000/011/003/004  
D221/D301

The metallographic ...

The suggested scale for evaluating non-metallic inclusions distinguishes three groups: Oxides, globular and sulphides. The scale division is based on the area taken up by the inclusions in one field of viewing, and which increases in a geometrical progression of 2 when passing from one mark to another. In 1959, the UkrNITI developed a special scale for streaky nitride inclusions of titanium in steel rolled sections. The project prescribes a 90 - 110 times magnification. The area taken up by inclusions of mark 3 is equal to that of the same mark scale of (GOST) 80-160. There are tabulated areas of various inclusions and their classification necessitates the separation of silicates into an individual group. They form greatly deformed, plastically deformed and non-deformed inclusions. The project assumes the average mark from the maxima of specimen evaluations of inclusions as a criterion of casting. This is confirmed by statistical analysis. The errors in determining the average mark, and the method of their calculation for some types of inclusions are defined by the project of the standard. There are 2 figures, 5 tables and 9 Soviet-bloc references.

Card 2/2

SMIRNOVA, A.V.; KRASNOVA, A.K.; VOLKOVA, L.A.; MAKAROVA, V.N.

Methods for the exposure and determination of the grain size  
of austenite in steel. Standartizatsiia 27 no.5:23-28 My '63.  
(MIRA 16:6)

(Austenite—Metallography)

KRASNOVA, A.K.; SMIRNOVA, A.V.

Reagent for detecting austenite grains. Zav. lab. 29 no.10:  
1204-1205 '63. (MIRA 16:12)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy  
metallurgii imeni I.P. Bardina.

KRASNOVA, A.K.; SMIRNOVA, A.V.; VOLKOVA, L.A.

Methods of revealing the actual austenite grain in steel. Sbor.  
trud. TSNIICHM no.32:51-55 '63. (MIRA 16:12)

SMIRNOVA, A. V.; KRASNOVA, A. K.

"Elektronenfraktographie der Proben von gegossener Legierung EI-437 B,  
die bei verschiedenen Temperaturen zerstört sind."

report submitted for 3rd European Regional Conf, Electron Microscopy,  
Prague, 26 Aug-3 Sep 64.

L 7036-65 ENT(m)/EMP(q)/EMP(h) P40 AFNL/ASD(s)-3/SSD/RAEM(t) LNW/JD/TW/JG

ACCESSION NR: AP4035088

8/0032/64/000/005/0511/0513

AUTHORS: Saiznova, A. V.; Krasnov, A. E.; Gromova, G. F.; Vinograd, M. I.

TITLE: Electron microscopic investigation of cracks in cast alloy EI437B

SOURCE: Zavodskaya laboratoriya, No. 5, 1964, 571-573

TOPIC TAGS: EI437B cast alloy; InSi7TiFe alloy; phase structure; fractography; surface property; metal grain structure

ABSTRACT: The method used by the authors permits simultaneous study of relief on fractures and the phase composition of particles disposed on the fracture surface. This method, furnishing a single-stage carbon print or film, was described in a previous paper by A. V. Saiznova and G. A. Kokorin (Zavodskaya laboratoriya, XIV, 12, 1446, 1957). The prints were separated from the cracks by an electrolytic solution of a layer of metal in 10% solution of nitric acid in methyl alcohol, at low current density. This permitted relatively large pieces of the film to be removed, carrying with them segregated particles of the different phases. To remove the particles themselves, the film was washed in 10%  $H_2SO_4$ , which dissolved the oxide film as well. The surface structure of the cracks was studied with no additional etching. Samples were broken by the blow of a hammer at room temperature.

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L 7036-65

ACCESSION NR: AP4035088

(and also at 12500) and placed immediately in a vacuum device for plating with the carbon film. For comparison the surface was then etched and studied again. It was found that segregations of chromium boride accumulated at crystal boundaries, especially between dendrite axes. Particles of  $\gamma'$ -phase  $\text{Ni}_3(\text{Ti}, \text{Al})$  were much less common at the crystal boundaries. Small centers of fracturing were observed about the finely disseminated  $\gamma'$ -phase, and large, greatly extended edges were found in places where single or grouped inclusions of the boride phase were found, or where nonmetallic inclusions were present. Where the primary foci of fracturing were small, the lines of deformation were more nearly rectilinear than where the primary foci were coarse. The nature of the fracturing depends on the nature, size, number, and distribution of excess phases in the alloy. Orig. art. has 3 figures and 1 table.

ASSOCIATION: Tsentrallyy nauchno-issledovatel'skiy institut Chernoy metallurgii im. I. P. Bardina (Central Scientific Research Institute of Ferrous Metallurgy)

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NO REF SOV: 004

OTHER: 000

Card 2/2

SMIRNOVA, A.V.; KRASNOVA, A.K.

Standardization of the methods for the determination of grain  
size in austenite steels. Standartizatsiya 28 no.8:55-56 Ag '64.  
(MIRA 17:11)



L 15758-65 EWT(m)/ERA(4)/T/EMP(E)/EMP(5) ID  
ACCESSION NR: AP6069252

S/0028/64/000/008/0055/0056

AUTHORS: Skrylova, A. V. Krasnova, A. A.

TITLE: Standardisation of methods for determining grain size in austenitic steels

SOURCE: Standartizatsiya, no. 8, 1964, 55-56

TOPIC TAGS: steel

ABSTRACT: Years of using the standard GOST 5639-51 (Steel: the method of determining grain size) have shown a number of deficiencies. The Tsentral'nyy nauchno-issledovatel'skiy institut Chernoy Metallurgii im. I. P. Bardina (Central Scientific-Research Institute for Ferrous Metallurgy) has developed a new standard (Steel: methods of investigation and determination of grain size) to replace GOST 5639-51. The new standard results from a study of extensive literature from nations all over the world as well as from actual work in the laboratories of the Central Metallurgical Institute. It provides for the metallographic method of determining grain size for all kinds of steel. The method of investigation has been refined and extended. An improved method of treating and preparing thin sections is proposed. The new standard calls for qualitative evaluation of grain

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L 15758-65

ACCESSION NR: AP/069250

size by computing the average number of grains in a square millimeter of the thin section or by measuring either the average grain diameter or the average number of grains per square millimeter. Revised tables are included, giving only parameters necessary for determining grain size by quantitative methods. These parameters are grain size in  $\mu\text{m}$ , number of grains per  $\text{mm}^2$ , number of grains per  $\text{mm}^3$  and average diameter of grains in millimeters. Various scales, based on the best existing dissectional standards, are provided to permit proper measurements over a wide range in grain size through comparative examination. A graph is given for determining true grain size and for supplying the value of the correction factor.

ASSOCIATION: none

SUBMITTED: 00

ENGL: 00

SUB CODE: MM

NO REF SOV: 000

OTHER: 000

Card 2/2



of metals), 19-21

TOPIC 7/28: alloy ductility, fracture test, alloy forgeability, metallographic examination, electron microprobe analysis, petrographic analysis, nonmetallic inclusion, ultrasonic inspection, high temperature plasticity / alloy 214378

ABSTRACT: The reasons for the poor plasticity of alloy 214378 under the influence of hot working were investigated by forgeability, impact and tensile strength tests within the 1100 - 1350 °C temperature range. Conventional methods were employed for metallographic and microstructural examinations of nonmetallic inclusions and the fracture surface was studied under the electron microscope. It

End 1/3

1. 27770-05

ACCESSION NO. 1.5001302

tanium nitride inclusions were revealed by chemical etching in all specimens. Photographic analysis showed the occurrence of characteristic inclusions in the form of a film with a thickness ranging from 0.1 to 0.5 microns in low plasticity specimens. These inclusions were found to be primarily composed of  $\text{SiO}_2$ . Their shape and location along intermetallic junctions and grain boundaries being indicative of their origin during crystallization when the oxygen dissolved in the metal was separated from the matrix.

during crystallization when the  $\text{Al}_2\text{O}_3$  component was separated from the solution. The crystal boundaries in these specimens were thick as a result of the separation of various phases, which was visible by thermal etching at 650-700°C, which also rendered lamellar separation more conspicuous. The diffraction pattern showed the formation of  $\text{Al}_2\text{O}_3$  phase and  $\text{Al}_2\text{O}_3$  along the grain boundaries accompanied by the frequent occurrence of various non-metallic inclusions. The results of room temperature tensile tests varied widely from those of tests carried out at 1250°C. In the case of brittle intermetallic fractures without any trace of plastic deformation were found at high temperatures, border phases predominated and plastic deformation came with the formation of wavy lines. Specimens with an adequate plasticity showed appreciably lower areas of deformation and therefore the plasticity was much higher. The authors suggest that investigations be continued on the basis of developing methods for the



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CIA-RDP86-00513R000826130



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CIA-RDP86-00513R000826130C

U 27770-65  
ACCESSION NO. 424003392

called analysis of the composition of plasticity-lowering inclusions is also recommended along with a study of the effect of hot plasticity and oxidation resistance. The petrographic analysis was carried out by A. G. Rybnikova and S. B. Zabezhinskiy. The x-ray spectroscopy was carried out by N. Y. Yegorshina and S. B. Zabezhinskiy. Thermal destruction was carried out in a device developed under the direction of S. M. Orlyanskaya (Mash. Stroy. Sci.) by N. Y. Yegorshina, L. A. Volkova and N. A. Ponomareva. Also see entry in the book "Dokl. Akad. Nauk SSSR" 23 figures and 1 table.



ASSOCIATION: <u>Association of American Scientists (AAS)</u>			
Address: <u>Washington, D.C. 20005</u>			
SUBMITTED: <u>00</u>	DATE: <u>00</u>	BY: <u>000000</u>	10
NO. OF PAGES: <u>00</u>	OTHER: <u>000</u>		

I. 10h50-67 EWT(m)/EWT(w)/EWT(t)/ETI LJP(c) JD/JQ  
 ACE NRI AP6022509 SOURCE CODE: UR/0133/66/000/004/0355/0459

AUTHORS: Vinograd, M. I.; Gnuchev, S. M.; Gromova, O. P.; Smirnova, A. V.; Ryl'nikova, A. G.; Osnovin, V. A.; Krasnova, A. K.; Likhova, I. V.; Yegorshina, T. V.

ORG: none

TITLE: Nonmetallic inclusions in melts of steel O8Kh20N10G6 exhibiting different hot technological plasticity

SOURCE: Stal', no. 4, 1966, 355-358

TOPIC TAGS: alloy steel, metallurgic research, aluminum, cerium / O8Kh20N10G6 alloy steel

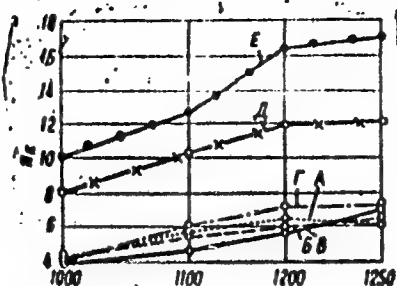
ABSTRACT: The effect of aluminum and rare earth elements (mainly cerium) on the technological plasticity of steel O8Kh20N10G6 was investigated. The investigation supplements the results of V. A. Osnovin and S. M. Gnuchev (Byulleten' TsIINChM, 1964, No. 6). The microstructure and twisting strength of the specimens was determined as a function of the temperature and nature of the reducing agent (see Fig. 1). It was found that addition of 1.5--2.0 kg/ton of Al and rare earth metals (0.15--2.0% on the basis of Ce) to steel O8Kh20N10G6 leads to a considerable increase in the high temperature plasticity of the latter. B. B. Lobedeva, I. A. Prokof'yeva, and L. I. Volkova participated in the experimental work.

UDC: 669.15:658.562

Card 1/2

L 10450-67

ACC NR: AP6022509



Experimental temperature, C.

Fig. 1. Results of torsion tests at high temperatures ( $n_k$  - number of revolutions at which failure occurred) of different melts A - E. Specimen A reduced in the usual way. All others reduced as described above.

Orig. art. has: 1 graph and 6 photographs.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 009

YEGOROV, M.N., prof., MISHCHENKO, Ye.D., SYCHEVA, A.N., KRASNOVA, A.M.

Chemotherapy of diabetes mellitus and problems of dietotherapy.  
Terap. arkh. 30 no.7:18-25 J1'58 (MIRA 11:8)

1. Iz kliniki lechebnogo pitaniya (sav. - prof. F.K. Men'shikov)  
Instituta pitaniya AMN SSSR.

(ANTIDIABETICS, therapeutic use,  
(Rus))

(DIETS, in var. dis.  
diabetes mellitus (Rus))

(DIABETES MELLITUS, therapy  
diets (Rus))

KRASNOVA, A. M.

"Relationship Between the Changes in the External Appearance of the Eggs of Ixodid Ticks and the Various Stages of their Development in the Egg Membranes."

Tenth Conference on Parasitological Problems and Diseases with Natural Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of Sciences, USSR, Moscow-Leningrad, 1959.

Saratov Zooveterinary Institute.

KRASNOVA, A.M.

Dynamics of bone marrow hematopoiesis in patients with diabetes mellitus during treatment with preparations with hypoglycemic action. Probl.gemat.i perel.krovi no.8:33-39 '61.

(MIRA 14:0)

1. Iz kliniki lechebnogo pitaniya (zav. - prof. F.K. Men'shikov)  
Instituta pitaniya AMN SSSR.

(DIABETES) (HEMOPOIETIC SYSTEM) (BLOOD SUGAR)

KRASNOVA, A.M.

Absorption of some micro- and macroelements in patients suffering  
from chronic enterocolitis. Terap.arkh. 34 no.3:73-81 '62.  
(MIRA 15:3)

1. Iz kafedry lechen'nogo pitaniya (zav. - prof. F.K. Men'shikov)

TSentral'nogo instituta usovershenstvovaniya vrachey.

(TRACE ELEMENTS IN THE BODY) (COLITIS)

KRASNOVA, A.M., starshiy laborant

Forecasting the time of the occurrence of ixodid larvae in nature  
based on external characteristics of eggs changing in the  
process of development. Trudy SZVI 11:271-278 '62.

(MIRA 16:7)

(Ticks) (Insects--Eggs)



KRASNOVA. A.M., starshiy laborant

Comparative study on the interrelationship between changes  
in the external characteristics and various stages of the  
embryonic development of two species of ixodid ticks. Trudy  
SZVI 11:279-286 '62. (MIRA 16:7)

(Ticks) (Insects—Development)

KRASNOVA, A.P.

KRASNOVA, A.P.; PARSHINA, E.A.; SUKHANOVSKIY, S.I.; CHUDAKOV, M.I.

Preparation of oxalic acid from hydrolytic lignin. Zhur.prikl.khim.  
30 no.5:802-806 My '57. (MIRA 10:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidroliznoy i  
sul'fitno-spirtovoy promyshlennosti.  
(Oxalic acid)

KRASNOVA, A.P.; SUKHANOVSKIY, S.I.; CHUDAKOV, M.I.

Nature of hydrolytic lignin. Zhur.prikl.khim. 30 no.12:1827-1831  
D '57. (MIRA 11:1)

(Lignin)

OKUN', M.G.; SUKHANOVSKIY, S.I.; CHUDAKOV, M.I.; KRASNOVA, A.P.

Rapid method for determining lignin. *Gidroliz i lesokhim. prom.* 12  
no.5:10-11 '59. (MIRA 12:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidroliznoy i  
sul'fitno-spirovoy promyshlennosti.  
(Lignin)

CHUDAKOV, M.I.; KRASNOVA, A.P.

Production of benzenepolycarboxylic acids from hydrolytic lignin by  
oxidation with alkali permanganate. Zhur. prikl. khim. 34 no.12:2754-  
2760 D '61. (MIRA 15:1)  
(Benzenecarboxylic acids) (Lignin)

CHUDAKOV, M.I.; KRASNOVA, A.P.

Production of benzenepolycarboxylic acids from hydrolytic lignin by  
oxidation with nitric acid. Zhur. prikl. khim. 34 no. 12:2760-2764,  
D '61. (MIRA 15:1)

(Benzenecarboxylic acids) (Lignin)

KRASNOVA, A.V.

Surgical diseases of children in Leningrad. Zdrav.Ros.Fed.  
7 no.4:21-26 Ap '63. (MIRA 16:4)

1. Iz kafedry organizatsii zdavookhraneniya (zav. -  
zasluzhennyy deyatel' nauki prof. Yu.A.Dobrovol'skiy, nauchnyy  
rukovoditel' raboty - prof. B.M.Khromov) Leningradskogo ordena  
Lenina instituta usovershenstvovaniya vrachey imeni S.M.  
Kirova (rektor - dotsent S.N.Polikarpov).

(LENINGRAD—CHILDREN—DISEASES)

(LENINGRAD—CHILDREN—SURGERY)

KRASNOVA, A. Ye.      Cand. Tech. Sci.

Dissertation: "Vitaminization of Confectionery Products and Optimum Conditions for Their Enrichment with Vitamin C." Inst of National Economy and G. V. Plekharov, 18 Apr 47.

SO: Vechnaya Moskva, Apr, 1947 (Project #17236)



FAL'KOVSKIY, G.E.; KRASNOVA, A.Ye.

Comparative evaluation of various methods of placing a circular  
vascular suture. Eksper.khir. 4 no.5:12-16 S-O '59. (MIRA 13:1)

1. Iz kafedry topograficheskoy anatomii i operativnoy khirurgii  
(zav. - prof. V.V. Kovanov) i Moskovskogo ordena Lenina meditsinskogo  
instituta imeni I.M. Sechenova.  
(BLOOD VESSELS, surg.)

KRASNOVA, B. I. Cand Chem Sci -- (diss) "Study of the stability of supersaturated salt solutions." Kiev, 1957. 13 pp 22 cm. (Inst of Hydrobiology, Acad Sci UkSSR), 100 copies (KL, 24-57, 116)

-15-

SKVORTSOV, V.V.; EYDINOVA, G.G.; LUPINA, M.I.; YAKUBOVA, G.R.; SINAY, A.Ya.;  
GOLUBEVA, T.V.; MIKHAYLOVA, A.M.; KRASHOVA, F.M.; KOBETSOVA, A.D.

Epidemiology of intestinal infections in children's institutions.  
Zhur. mikrobiol. epid. i immun. 32 no.6:47-51 Je '61. (MIWA 15:5)

1. Iz II Moskovskogo meditsinskogo instituta imeni Pirogova i  
sanitarno-epidemiologicheskoy stantsii Leningkogo rayona Moskv.  
(INTESTINES--DISEASES)

L 2791-66 EWT(m)/ENP(i)/T/ENP(t)/ENP(b)/ENA(c) LJP(c) JD

ACCESSION NR: AP5022246

UR/0363/65/001/007/1016/1020  
546.289:548.55

40  
35  
B

AUTHOR: Dorfman, V. F.; Belokon', M. S.; Krasnova, G. F.; Tolkacheva, G. N.

TITLE: Effect of growth conditions on certain properties of epitaxial germanium layers

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1016-1020

TOPIC TAGS: epitaxial growing, germanium, crystal dislocation

ABSTRACT: This paper deals primarily with the morphological and structural characteristics of epitaxial germanium layers grown by the iodide process. The dislocation density and its distribution over the thickness of the layers are determined by etching with 8 pts.  $K_3[Fe(CN)_6]$  + 12 pts. KOH + 100 pts.  $H_2O$ . As the temperature of the growing process rises, the role of homogeneous disproportionation of  $GeI_2$  in the gas phase increases. As a result, the structure of the epitaxial layers changes, and in particular, stacking faults appear. A hypothesis is advanced concerning the general nature of stacking faults and trigonal growth pyramids on the (111) plane. A mechanism accounting for both of these formations

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L 2791-66

ACCESSION NR: AP5022246

is proposed. The morphology of epitaxial deposits is closely related to their internal structure. Smooth deposits are obtained by decreasing the dislocation density and increasing the uniformity of their distribution in the layers. "The authors thank K. A. Bol'shakov and I. P. Kislyakov for their helpful comments throughout the course of the study, A.M. Anisimova and T. B. Plaskacheva for assistance in the experiments, and V. G. Kholodova for taking photographs with the electron microscope." Orig. art. has: 7 figures.

ASSOCIATION: none

SUBMITTED: 18Feb65

ENCL: 00

SUB CODE: SS, IC

NO REF SOV: 005

OTHER: 004

BVK  
Card 2/2

KORYAGIN, G.A.; KRASNOVA, G.S.; PASYNKOVA, Z.T.; MAKHOV, D.S.

Communication workers discuss their work practices. Avtom.,  
telem. i sviaz' 9 no.3:28 Mr '65. (MIRA 18:11)

1. Rabotniki Novosibirskoy distantssi Zapadno-Sibirskoy dorogi.

KNASNBZH, G.V.

USSR/Chemical Technology - Chemical Products and I-10  
Their Applications - Silicates. Glass.  
Ceramics. Binders.

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 9078

Author : Shvartszayd, M.S., and Krasnova, G.V.

Inst :

Title : High-Strength Concrete from Finely Ground  
Cements.

Orig Pub : Beton i zhelezobeton, 1956, No 8, 281-284

Abstract : The effect of finely ground sand, vibration-  
sized cement, and of the efficient compacting  
of the concrete mixture on the strength of  
autoclave-hardened concretes containing no  
large aggregates has been investigated. The  
concrete was prepared from grade 400 portland  
cement produced at the Belgorod plant,

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USSR/Chemical Technology - Chemical Products and Their Applications - Silicates. Glass. Ceramics. Binders. I-10

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 9078

containing 57.8%  $C_3S$  and 3.4%  $C_3A$   
( $S = 2100 \text{ cm}^2/\text{gm}$  /<sup>3</sup>TN: the latter symbol appears to stand for specific surface area<sup>7</sup>).  
Cement charges of 300, 450, and 600  $\text{kg}/\text{m}^3$  were used. A 4-8-3 schedule was used in the autoclaving of the concrete. The cement-to-sand ( $S = 4200 \text{ cm}^2/\text{gm}$ ) ratio used varied from 7 : 1 to 1 : 1. The crushing strength of finely ground autoclave-hardened concretes is 1.5 - 3 times greater than that of normally hardened concrete. The addition of finely ground sand to autoclave-hardened cement concretes makes it possible to obtain concretes of strengths equal to that of concrete prepared from "pure" cement. When a

Card 2/3



USSR/Chemical Technology - Chemical Products and  
Their Applications - Silicates. Glass.  
Ceramics. Binders.

I-10

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 9078

mixed cement charge of 300-500 kg/m<sup>3</sup> is used, the optimum amount of ground sand is 33-40%. The utilization of finely ground cements ( $S = 3700-4000 \text{ cm}^2/\text{gm}$ ) leads to an increase of 150-200% in the strength of the concrete relative concretes prepared from cement ground to the usual fineness. The substitution of a part of the finely ground cement with finely ground sand permits an increase in the strength of the concrete. The optimum amount of ground sand represents 25-40% of the weight of the mixed cement. When a cement charge of 150-450 kg/m<sup>3</sup> is used, fine-grained concretes having a crushing strength of 300-900 kg/cm<sup>2</sup> (5 x 5 x 5 cm specimens) are obtained.

Card 3/3

KRASNOVA, G. V., Cand Tech Sci -- (diss) "Study of certain problems of technology and properties of high-strength fine-grained concretes of autoclave hardening." Mos, 1958. 15 pp (Acad of Construction and Architecture USSR, Sci Res Inst of New Construction Materials, Finishing, and Outfitting of Buildings, Laboratory of Autoclave Silicate Materials), 200 copies (KL, 17-58, 108)

- 41 -

AUTHORS: Sokolova, Ye. B., ~~Krasnova, O. V.~~, Zhuravleva, T. A. SOV/156-58-2-32/48

TITLE: The Synthesis of Mono-Alkyl-Cyclohexanes of a  $C_{15}$  -  $C_{18}$  Composition With an Increased Density (Sintez monoalkiltsiklogeksanov sostava  $C_{15}$ - $C_{18}$  s povyshennoy plotnost'yu)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 2, pp. 330 - 334 (USSR)

ABSTRACT: A hydrocarbon fuel with a maximum calorific power per unit volume and with good combustion characteristics can be obtained only by a rational component selection of components, taking into account the composition and the structure. The paraffin- and naphthene hydrocarbons the densities of which are increased owing to the branched structure, are most interesting in this connection. Among the first the isomers with quadrivalent carbon atoms are most interesting. The increase of the number of lateral chains and the more compact position of the chains in the polysubstituted cyclohexane homologues or the presence of a carbon atom in the lateral chain of the monosubstituted alkyl-cyclohexanes lead to a

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The Synthesis of Mono-Alkyl-Cyclohexanes of a  $C_{15}-C_{18}$  SOV/156-58-2-32/48  
Composition With an Increased Density

considerable density even at a constant molecular weight. It was the purpose of this paper to produce a number of monosubstituted cyclohexane homologues the carbon structure of which contains 1 or 2 carbon atoms; furthermore the evaluation of the influence of a branched structure on the density. After presenting a detailed experimental part the authors draw the following final conclusions : 1) 4 new mono-alkyl-substituted benzene homologues were synthesized and characterized according to their main physical and chemical properties; from these 4 new mono-alkyl-substituted cyclohexane homologues were produced by catalytic hydration, containing 1 or 2 carbon atoms in the lateral chain. 5 new tertiary alcohols were produced for the first time as intermediates in the synthesis. The mentioned final products are the following: 2,4-dimethyl-1-4-cyclohexyl octane, 2,6-dimethyl-4-propyl-4-cyclohexyl heptane, 2,2,4,6-tetramethyl-4-cyclohexyl heptane, and 2,2,5-trimethyl-3-cyclohexyl hexane. The density of these cyclanes amounts to from 0,8392 to 0,8450. This surpasses considerably the density

Card 2/4

The Synthesis of Mono-Alkyl-Cyclohexanes of a  $C_{15}-C_{18}$   
Composition With an Increased Density

SOV/156-58-2-32/48

of the mono-alkyl-substituted homologues of the cyclohexane of the same composition with a normal or only to a small extent branched lateral chain. The density increase in consequence of the structure ramification amounts to approximately 3% for the synthesized hydrocarbons. The increase of the calorific value per unit volume connected with it is of considerable practical interest. There are 1 figure and 6 references, 2 of which are Soviet.

ASSOCIATION: Kafedra tekhnologii iskusstvennogo zhidkogo topliva i gazov  
Moskovskogo khimiko-tekhnologicheskogo instituta im. D.I.  
Mendeleyeva (Chair of Technology of Artificial Liquid Fuels  
and Gases of the Moscow Institute of Chemical Technology  
imeni D.I. Mendeleev)

SUBMITTED: October 3, 1957

Card 3/4

The Synthesis of Mono-Alkyl-Cyclohexanes of a  $C_{15}-C_{18}$   
Composition With an Increased Density

SOV/156-58-2-32/48

Card 4/4

83688

S/032/60/026/009/002/018  
B015/B058

// 3000  
AUTHORS:

Datskevich, A. A., Zhigacheva, L. P., Krasnova, G. V.,  
Lapitskaya, M. D., Latukhova, A. G., Moshinskaya, M. B.

TITLE:

Determination of Small Amounts of Hydrogen in Helium

PERIODICAL:

Zavodskaya laboratoriya, 1960, Vol. 26, No. 9,  
pp. 1082 - 1083

TEXT: A method of determining hydrogen in helium according to the adsorption development chromatography was elaborated. The experiments were made on a XT-2M (KhT-2M) chromatographic instrument with a developer based on the thermochemical principle (Ref. 1). The working conditions were selected in such a way that a detector could determine both components by two characteristics, i.e., helium by the thermal conductivity and hydrogen by the heat of combustion. A 6 m long metallic separation column, filled with CKT (SKT) coal and with air as carrier gas, was used for analyses at room temperature. The sensitivity to hydrogen amounted to 0.5% at a relative accuracy of 5%. A 10 m long polyvinyl chloride tube was used for analyses at low temperatures and work was carried out

Card 1/2

83688

Determination of Small Amounts of Hydrogen  
in Helium

S/032/60/026/009/002/018  
B015/B058

at - 35°C, making it possible to obtain a better separation and to use larger sample quantities, so that the sensitivity rose to 0.05%. A comparison of the measuring results on the KhT-2M instrument with those obtained at a combustion over copper oxide is tabulated. There are 2 figures, 1 table, and 1 Soviet reference.

ASSOCIATION: Konstruktorskoye byuro avtomatiki i telemekhaniki  
(Design Office for Automation and Telemechanics).  
Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy  
neftyanoy institut (All-Union Petroleum Scientific Re-  
search Institute of Geological Survey). Moskovskiy zavod  
szhizheniya prirodnogo gaza (Moscow Plant for Liquefying  
Natural Gas)

Card 2/2



POPOV, N.A., zasl. deyatel' nauki i tekhniki, prof.; ~~KRASNOVA, G.V.~~,  
kand. tekhn. nauk; VINOGRADOV, B.N., inzh.; ROGACHEVA, O.I.,  
inzh.; GLEZAROVA, I.L., red.; BOROVNEV, N.K., tekhn. red.

[Lightweight autoclave concretes with porous filters] Legkie  
avtoklavnye betony na poristykh zapolniteliakh. Moskva, Gos-  
stroizdat, 1963. 92 p. (MIRA 16:7)

1. Deystvitel'nyy ohlen Akademii stroitel'stva i arkhitektury  
SSSR (for Popov)..

(Concrete)

L 08121-67 EWT(m)/EWP(v)/EWP(t)/ETI LJP(c) JD/HW/JT-2/GD  
 ACC NR: AT6034457 (N) SOURCE CODE: UR/0000/66/000/000/0205/0208

AUTHOR: Khatalakh, R. F.; Krasnova, I. A.; Dubrovina, I. N.; Zimina, L. N.; Kosheleva, G. F.

ORG: none 16 16 16 55 131

TITLE: EP404 and EP454 economical heat-resistant alloys

SOURCE: AN SSSR, Institut metallurgii. Svoystva i primeneniye zharoprochnykh splavov (Properties and application of heat resistant alloys). Moscow, Izd-vo Nauka, 1966, 205-208

TOPIC TAGS: iron nickel alloy, aluminum containing alloy, high temperature alloy, molybdenum containing alloy, tungsten containing alloy, chromium containing alloy/EP404 alloy, EP454 alloy

ABSTRACT: Two new EP404 and EP454 nickel-iron base wrought heat-resistant alloys have been developed as less expensive substitutes for EI867 and EI827 nickel-base alloys intended for short-time operation under high stresses. The new alloys are available in the form of forgings and rolled stock. Both can be hot worked in the 950—1200C range compared with the 1050—1150C range for EI827 and EI867 alloys. The heat treatment of EP404 and EP454 alloys includes annealing for 6 hr at 1175—1200 and 1150—1175C, respectively, followed by air cooling and

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L 08124-67

ACC NR: AT6034457

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aging at 750—800C for 10 hr. The heat-treated alloys have high strength and ductility in the 20—800C range comparable to those of EI827 and EI867 alloys. EP404 alloy has a high yield strength (80 kg/mm<sup>2</sup>) at 20—800C and EP454 alloy has an impact strength of about 12—19 kg.m/cm<sup>2</sup> in the 930—1200C range. Both alloys soften appreciably at temperatures above 800C. The rupture strength of EP404 and EP454 alloys at 750C was practically the same as that of EI867 and EI827 alloys. The 100-hr rupture strength of EP454 alloy at 850C was 20 kg/mm<sup>2</sup> and the 200-hr rupture strength at 800C was 25 kg/mm<sup>2</sup>. EP404 alloy has higher characteristics of heat resistance [unspecified] than EP454 alloy. Prolonged aging of EP404 alloy at 800C resulted in the precipitation of the brittle  $\epsilon$ -phase (an Fe<sub>7</sub>W<sub>6</sub>-type phase containing about, wt%, 14 Ni, 10 Cr, 11 Fe, 37 Mo, 28 W). This can be avoided by annealing at 1000C and subsequent aging. Stressless aging of EP404 alloy at 750C brought about no changes in the structure or hardness. However, aging under a stress of 50 kg/mm<sup>2</sup> for 0.5—10 hr caused intensive precipitation of the  $\gamma'$ -phase (Ni<sub>3</sub>Al) with no  $\epsilon$ -phase precipitation. Aging of EP454 alloy at 750 and 800C with or without stress changed only slightly the alloy hardness. No structural change was observed in EP404 and EP454 alloys with aging at 750C for 100 hr, indicating the structure stability of the alloys. V. V. Topilin, T. G. Pegova, V. M. Romashov, A. P. Boyarinov, V. K. Tsvetkova and N. D. Orekhov participated

Card 2/3 1s

L 08424-67  
ACC NR: AT6034457

in the development of the new alloys. Orig. art. has: 3 figures and  
1 table.

SUB CODE: 11/ SUBM DATE: 10Jun66/ ATD PRESS: 5103

Card 3/3 1s

BORZOV, M.V.; KOSSOVSKAYA, O.Ya.; KRASNOVA, I.M.

Occupational dermatitis caused by lacquer in workers of a plant  
manufacturing cinematographic apparatus. Vest. dermat. i ven. 38  
no. 7:40-41 J1 '64. (MIRA 18:4)

1. Kafedra kozhnykh i venericheskikh bolezney (nav. - prof. M.V.  
Borzev) Odesskogo meditsinskogo instituta imeni Pirogova.

AKIMOV, I.G.; KRASHOVA, I.N.

Use of skim milk hydrolysate as a nutrient medium for streptococcus. Lab.delo 6 no.2:47-50 Mr-Ap '60. (MIRA 13:6)

1. Kafedra mikrobiologii (zav. - dotsent I.G. Akimov) Ivanovskogo meditsinskogo instituta (dir. - dotsent Ya.M. Romanov).  
(BACTERIOLOGY--CULTURES AND CULTURE MEDIA)  
(STREPTOCOCCUS) (MILK AS FEEDING STUFF)

KRASNOVA, I.N.

Studies on antibiotic resistance of pathogenic serotypes of *Escherichia coli*. Antibiotiki 6 no.2:158-160 F '61. (MIRA 14:5)

1. Kafedra mikrobiologii (zav. - chlen-korrespondent AMN SSSR prof. Z.V.Yermol'yeva) Tsentral'nogo instituta usovershenstvovaniya vrachey.  
(ESCHERICHIA COLI) (ANTIBIOTICS)

KRASNOVA, I.N.

Comparative studies on the effectiveness of polymyxin and antibiotics of the neomycin series in experimental infections caused by pathogenic serotypes of Escherichia coli. Antibiotiki 6 no.5:406-409 My '61.  
(MIRA 14:7)

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AUTHOR: Krasnova, K.S.

TITLE: The Calculation of the Stream of Heat and Humidity by a Nomograph Method

PERIODICAL: Uch. zap. Kirovskiy gos. ped. in-t, 1958, Nr 15, pp 105 - 113

ABSTRACT: Nomographs for the calculation of the vertical streams of heat and humidity in the layer of the atmosphere near the Earth's surface are plotted using D.L. Laykhtman's formulae ("Physics of the Atmosphere Layer Near the Earth's Surface", GITTL, 1949):

$$P = \frac{\rho x^2 u_1 \epsilon^2 z_0^{2\epsilon} C_p (T_2 - T_1)}{(z_1^\epsilon - z_0^\epsilon) (z_2^\epsilon - z_1^\epsilon)}$$

$$E = \frac{\rho x^2 u_1 \epsilon^2 z_0^{2\epsilon} (q_2 - q_1)}{(z_1^\epsilon - z_0^\epsilon) (z_2^\epsilon - z_1^\epsilon)}$$

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# The Calculation of the Stream of Heat and Humidity by a Nomograph Method

wherein  $P$  is the stream of heat,  $E$  is the stream of humidity,  $\epsilon$  is a parameter characterizing the steadiness,  $z_0$  is the roughness,  $\rho$  is the air density,  $C_p$  is the thermal capacity of the air,  $T_2 - T_1$  and  $q_2 - q_1$  are the differences in temperature and in specific humidity of the air in respect to the heights  $z_2$  and  $z_1$  (it is assumed that  $z_1 = 0.5$  m and  $z_2 = 2$  m),  $\chi$  is connected with the Karman constant  $\chi_0$  by the formula

$$\chi = \frac{\chi_0}{1 - \dots}$$

The nomograph plotted in the article on the basis of adjusted points for calculating  $P$  and  $E$  requires the superposition on four indices. This complicates the application of the nomograph. Therefore, a transparent nomograph is proposed in addition, which is less precise but more simple in use. Based on the comparison of the calculation results with the aid of the nomograph and by the formulae, the conclusion is drawn on the practically acceptable accuracy of the nomograph.

M.Ye. Berlyand

Card 2/2

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